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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,114	06/14/2001	Dennis H. Locke		7922

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EXAMINER
PHAM, LEDA T

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/881,114	LOCKE, DENNIS H.	
	Examiner	Art Unit	
	Leda T. Pham	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because there is claimed language "comprising" on line 1 page 18 in the abstract. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1 – 2, 6 – 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (U.S. Patent No. 6,201,329 B1).

Chen teaches an apparatus (figure 1) comprising a rotor (34), a stator (36), first and second axially spaced combinations (figure 7 and figure 8) each including at least one permanent magnet (206, 204) disposed on each of said rotor (218) and said stator (208) and polarized to levitate said rotor and further including an electrically energizable coil (92, 94, figure 1) for modulating magnetic flux between said respective stator and rotor magnets, electrical circuitry (110) for regulating electrical energy to said coils for stabilizing said rotor axially (figure 4 and figure 5), and said rotor magnets being offset axially of said stator magnets respectively such that said rotor magnets are offset axially inwardly of said corresponding stator magnets or such that said rotor magnets are offset axially outwardly of said corresponding stator magnets (lines 32 – 45, column 16).

Referring to claim 2, Chen teaches the electrical circuitry (figure 4, and figure 5) includes a first circuit for regulating electrical energy to said coils (92, 94) for maintaining an axial reference position of said rotor (34) and a second circuit responsive to feed-back of electrical energy to at least one of said coils for modifying said axial reference position (see lines 47 – 65, column 8).

Referring to claim 6, Chen teaches the apparatus wherein said rotor magnets are offset axially outwardly of said stator magnets respectively (lines 32 – 45, column 16).

Referring to claim 7, Chen teaches the apparatus wherein said rotor magnets are magnetized to repel said stator magnets respectively (figure 8, lines 32 – 45, column 16).

Referring to claim 8, Chen teaches the apparatus wherein said magnets are axially polarized (figure 8).

Referring to claim 9, Chen teaches the apparatus wherein said magnets (204, 206) are magnet rings (lines 38 – 41, column 10).

Referring to claim 10, Chen teaches the apparatus wherein each of said combinations comprises two of said rotor magnet which are polarized axially in opposite directions and two of said stator magnet which are polarized axially in opposite directions (figure 8).

Referring to claim 11, Chen teaches the apparatus wherein said coil (92, 94) is positioned on said stator (figure 3).

Referring to claim 12, Chen teaches the apparatus further comprising magnetic material (50, 51) in surrounding relation to said coil (92, 94, figure 3).

Referring to claim 13, Chen teaches the apparatus wherein said coil (92, 94) is positioned on said stator (figure 3), the apparatus further comprising means defining an air gap (56, 60, 64, 68, and 72) between said magnetic material and said respective stator magnet.

Referring to claim 14, Chen teaches the apparatus further comprising magnetic material (466) disposed alongside said stator magnet (454, figure 10).

Referring to claim 15, Chen teaches apparatus (figure 1) comprising a rotor (34), a stator (36), first and second axially spaced combinations (figure 7 and figure 8) each including at least one permanent magnet (206, 204) disposed on each of said rotor (218) and said stator (208) and polarized to levitate said rotor and further including an electrically energizable coil (92 and 94) for modulating magnetic flux between said respective stator and rotor magnets, a first electrical circuit for regulating electrical energy to said coils for maintaining a reference position of said rotor, and a second electrical circuit responsive to feed-back of electrical energy to at least one of said coils for modifying said reference position (110, figure 4 and figure 5).

Referring to claim 16, Chen teaches the apparatus wherein said rotor magnets (206) are offset axially outwardly of said stator magnets (204) respectively (lines 32 – 45, column 16).

Referring to claim 19, Chen teaches the apparatus wherein said coil (92, 94) is positioned on said stator (figure 3), the apparatus further comprising magnetic material (50, 51) in surrounding relation to said coil (92, 94), means defining an air gap (56, 60, 64, 68, and 72) between said magnetic material and said respective stator magnet, and magnetic material (466) disposed alongside said stator magnet (454, figure 10).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3 – 5, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Prem (U.S. Patent No. 5,928,131).

Chen substantially discloses the apparatus having the electrical circuitry including the first circuit and the second circuit but fails to disclose the second circuit including a comparator for comparing electrical energy to at least one of said coils with a reference electrical energy and an integrator of the differences.

Prem in figure 5 discloses a magnetically suspended fluid pump and control system having a comparator (119) for detecting and controlling the sign of the sine wave.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit in Chen's apparatus having the comparator as taught by

Prem. Doing so would provide the comparator for comparing electrical energy to at least one of said coils with a reference electrical energy and an integrator of the differences.

Referring to claim 4, Chen discloses the said reference electrical energy is about zero volts.

Referring to claim 5, Prem discloses wherein said circuitry includes a rotor position sensor (417), a comparator (119) for outputting a difference signal between a signal from said sensor and a position reference signal, and a PID controller for receiving said difference signal and outputting electrical energy to said coils in response to said difference signal (lines 5 – 10, column 10 in Chen).

Referring to claim 17, Prem discloses the apparatus wherein said second circuit includes a comparator (119) for comparing electrical energy to at least one of said coils with a reference electrical energy and further includes an integrator of the differences.

Referring to claim 18, Chen disclosed wherein said reference electrical energy is about zero volts.

With regard to claims 20 – 22 the method of bearing a rotor would be inherent and obvious since the prior are references meet the structural limitations of the claimed device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 746-9176 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834

LTP
September 24, 2002

NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
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